Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C.

In the Matter of	)	
	)	
Rulemaking to Amend Parts 1, 2, 21, and 2 of the Commission's Rules to Redesignate the 27.5 - 29.5 GHz Frequency Band, to Reallocate the 29.5 - 30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services	)	CC Docket No. 92-297
and	)	
Suite 12 Group Petition for Pioneer's Preference	)	PP-22

JOINT COMMENTS OF THE ASSOCIATION OF AMERICA'S PUBLIC TELEVISION STATIONS AND PUBLIC BROADCASTING SERVICE

Marilyn Mohrman-Gillis
Lonna M. Thompson
ASSOCIATION OF AMERICA'S
PUBLIC TELEVISION STATIONS
1350 Connecticut Avenue, N.W.
Suite 200
Washington, D.C. 20036
(202) 887-1700

Paula A. Jameson
Gregory Ferenbach
PUBLIC BROADCASTING SERVICE
1320 Braddock Place
Alexandria, Virginia 22314
(703) 739-5063

Technical Consultant

Jeffrey A. Krauss, Ph.D.
Telecommunications and Technology Policy
17 West Jefferson Street
Suite 106
Rockville, Maryland 20850

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The Association of America's Public Television Stations ("APTS") and Public Broadcasting Service ("PBS") (hereinafter "Public Television") submit their joint comments in response the Commission's Third Notice of Proposed Rulemaking and Supplemental Tentative Decision, CC Docket No. 92-297 ("NPRM"), in which the Commission proposes a band segmentation plan for Local Multipoint Distribution Service ("LMDS") and Fixed Satellite Service ("FSS") operation in the 28 GHz band.

Introduction and Summary of Position

APTS is a private, non-profit membership organization whose members include virtually all of the nation's 350 public television stations.

APTS engages in planning and research activities on behalf of its member stations, as well as representing its members in the legislative and policy arenas before the Commission, Congress, and the Executive Branch.

PBS is a private, non-profit corporation that distributes television programming produced by public television stations. PBS manages public television's satellite interconnection system, the capabilities of which have been expanded with the advent of digital technology.

Public Television has participated in this proceeding since its inception.[1] In past filings, Public Television has explained the importance of receiving a portion of the proposed LMDS spectrum for use as a cost effective, "last mile" delivery system for the interactive video and data network of services made available through public broadcasting stations to schools, libraries, and other learning centers.[2] In addition, Public Television and various educational parties jointly held a position on the Negotiated Rulemaking Committee that attempted to reach a technical solution to sharing the 28 GHz band by the competing terrestrial and satellite interests.

Public Television supports the Commission's proposed segmentation scheme for the 28 GHz band. Specifically, Public Television requests a reservation of the proposed 150 MHz of LMDS co-primary shared spectrum in

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1 In the Matter of Rulemaking to Amend Part 2 and Part 21 of the Commission's Rules to Redesignate the 27.5 - 29.5 GHz Frequency Band and to Establish Rules and Policies for Local Multipoint Distribution Service, Notice of Proposed Rulemaking, Order, Tentative Decision and Order on Reconsideration, 8 FCC Rcd 557 (1993); Second Notice of Proposed Rulemaking, 9 FCC Rcd 1394 (1994).

2 See APTS and PBS Joint Comments, filed March 16, 1993; Joint Reply Comments, filed April 15, 1993; and Response to the FCC's Public Notice on Establishment of a Negotiated Rulemaking Advisory Committee, filed March 21, 1994. See also the Educational and Public Telecommunications Entities' filing in the Negotiated Rulemaking process, Recommendations For Assurance of Access By Educational and Public Telecommunications Entities in the Event That Spectrum Auctions Are Used For Award of LMDS Licenses, NRMC-111, included in the Addenda to the Report of the LMDS/FSS 28 GHz Band Negotiated Rulemaking Committee, September 23, 1994.

the 29.1-29.25 GHz band for noncommercial educational licensees. Additionally, Public Television requests that less restrictive technical rules than those proposed for this 150 MHz band be adopted to allow two-way use of the spectrum and less stringent LMDS power limits. To allow noncommercial entities rapid implementation of LMDS systems, the Commission should adopt rules that permit the noncommercial entities to engage in excess capacity leasing arrangements with commercial entities.

As an alternative to a reservation of the 29.1-29.25 GHz band, Public Television requests that the Commission require LMDS licensees in the 150 MHz of 29.1-29.25 GHz spectrum and the 850 MHz of 27.5-28.35 GHz spectrum to set aside some portion of their capacity for use by noncommercial educational entities at free or preferential rates. As an incentive to LMDS licensees to provide additional access, the Commission could adopt auction rules that allow for bidder credits, auction preferences, or other forms of incentives that coincide with the amount of capacity guaranteed for noncommercial access.

I. LMDS Service Offers the Capability for Interactive Educational Uses, and the Commission Should Adopt a Set Aside of LMDS Spectrum for Noncommercial Use

LMDS can be used by public television and other educators in the delivery of interactive distance learning services from stations to schools, libraries, homes, training centers, day care facilities and other recipient facilities. These entities offer interactive instructional services and community public services that continually are being expanded through development of new technologies. For example, Satellite Educational Resources Consortium ("SERC"), a consortium of state departments of education and public television stations, transmits interactive distance

learning courses to approximately 5,000 students in more than 500 schools in 32 states by satellite and other media. PBS ONLINE, which uses both satellite and ground-based networks, delivers lesson plans, course materials, program transcripts, and video segments to schools in 20 states. Additionally, PBS offers *Mathline,* a video, data, and voice service devoted to improving the math achievement of American students, as well as Ready-to-Learn, an early childhood development service aimed at helping parents and childcare providers prepare children for school. These existing interactive services generally depend upon wired classrooms and costly telephone hookups to operate. LMDS offers the dual benefits of reducing present costs of providing such services and offering the opportunity to expand such services to those who cannot easily be reached with wired telephony services, including classrooms and training facilities in rural and remote communities.

It is essential that public broadcasters and other educators be afforded the opportunity to use any new emerging technologies that offer the potential to expand the interactive capabilities of educational services. Without reservation of LMDS spectrum for noncommercial use, noncommercial entities essentially will be denied access to LMDS services, because they simply cannot compete financially against commercial interests in auctions. Therefore, Public Television advocates a set aside of the 150 MHz of 29.1-29.25 GHz LMDS spectrum for such educational uses.[3]

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3 Should this 150 MHz band be reserved for noncommercial use, Public Television does not support use of auctions for awarding licenses to noncommercial entities in these bands.

A. The Commission Should Adopt Rules That Permit Noncommercial LMDS Licensees Leasing Arrangements for Excess Capacity

In order to allow for the rapid implementation of noncommercial LMDS systems, the Commission should adopt rules permitting noncommercial LMDS licensees to lease excess LMDS capacity. The leasing arrangements should allow a portion of the noncommercial spectrum to be leased either to the LMDS licensees in the 27.5-28.35 GHz band or other commercial entities interested in operating cooperatively with the noncommercial licensees.

Rules permitting leasing arrangements could be modeled after the wireless cable/ITFS rules that allow leasing agreements between these entities. Adoption of such rules would create a practical means for noncommercial LMDS licensees to timely construct and operate noncommercial systems.

B. The Requested Reservation Would Be Consistent With Congressional and Commission Policies

The requested reservation would be consistent with Congress' finding that "it is in the public interest for the Federal Government to ensure that all citizens of the United States have access to public telecommunications services through all appropriate available telecommunications distribution technologies" (47 U.S.C. §396(a)(9)). It would also be consistent with the long-standing Congressional and Commission policies guaranteeing the American public access to public telecommunications services through broadcast, HDTV, cable, direct broadcast satellite, and common carrier technologies.

Congress long has recognized the importance of utilizing nonbroadcast mechanisms for the delivery of public service programming. As early as 1967,

Congress found that "it is in the public interest to encourage the growth and development of nonbroadcast telecommunications technologies for the delivery of public telecommunications services."[4] In 1978, Congress adopted the Telecommunications Financing Act to assist in the funding of public telecommunications facilities to "extend delivery of public telecommunications services to as many citizens of the United States as possible by the most efficient and economical means, including the use of broadcast and nonbroadcast technologies."[5] In 1988, Congress restated its belief that public television must keep pace with the rapidly changing technical development when it funded the new satellite interconnection system: "It is critical that the public broadcasting system be able to take advantage of technologies such as advanced television technologies, including HDTV, interactive video and digital data distribution."[6]

Congress adopted the Public Telecommunications Act of 1992, emphasizing the importance of ensuring "access to public telecommunications services through all appropriate available telecommunications distribution technologies."[7] The House Report to this legislation emphasized the importance of "a policy of broad access to the essential public services offered by public telecommunications, regardless of the technology used to deliver those services, in order to advance the compelling governmental interest in increasing the amount

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4 47 U.S.C. §396(a)(2).

5 Id. at §390.

6 H.R. Rep. No. 825, 100th Cong., 2d Sess. 14 (1988), reprinted in U.S. Code Cong. & Ad. News 4357, 4369.

7 Pub. L. No. 102-356, 106 Stat. 949 (Aug. 26, 1992).

of educational, informational, and public interest programming available to the nation's citizens."[8]

In conclusion, reservation of the 150 MHz of LMDS spectrum in the 29.1-29.5 GHz band and adoption of rules allowing noncommercial LMDS licensees leasing arrangements with commercial entities will make available a cost-effective solution to the "last mile" problem for noncommercial entities. Public Television urges the Commission to support the long-standing federal policy of facilitating access to and maximizing use of emerging technologies to achieve the widest possible distribution of services to our nation's citizens.

II. The Commission Should Adopt Less Restrictive Technical Rules for the 29.1-29.25 GHz Band

The Commission's proposed technical rules for the 29.1-29.25 GHz band (proposed Sections 21.1018-21.1022) would impose unnecessarily restrictive conditions on LMDS licensees, and Public Television believes that there are less restrictive means that could achieve the Commission's goal of interference mitigation. The proposed complete prohibition on two-way transmissions in this band would preclude a wide variety of interactive services, including services that are particularly well-suited to public television and other non-profit licensees. The Commission can permit two-way use in this band, with no additional power or population restrictions, by imposing on LMDS subscriber stations in this band the limits proposed for LMDS hubs in this band. These technical rules, which are based on preliminary system designs, can and should be reviewed after Mobile Satellite

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8 H.R. Rep. No. 363, 102d Cong. 1st Sess. 18 (1991).

Service (MSS) and LMDS systems become operational to determine whether the power and population restrictions are adequate to avoid interference. In the interim, should two-way transmission of subscriber stations in this band cause any undue interference in a particular case, upon a showing of such interference from an MSS system operator, the Commission could impose appropriate additional limitations on the particular LMDS subscriber station transmissions at the that time.

A. LMDS Subscriber Stations Can Initially Operate Under Rules Based On Those That Are Adopted For LMDS Hub Stations, and This Decision Can Be Revisited

The proposed technical rules in Sections 21.1002-21.1022 are intended to provide for frequency sharing between LMDS stations and MSS systems in the 29.1-29.25 GHz band.[9] See NPRM at ¶¶ 60-63. These proposed technical rules are intended for three purposes: 1) to limit the interference from MSS feeder link uplinks into LMDS systems, 2) to specify areas where LMDS systems must accept interference from MSS feeder link uplinks, and 3) to limit interference from LMDS stations into MSS satellite receivers.[10]

The proposed rules in Sections 21.1020 and 21.1021 govern the power levels and antenna performance of LMDS hubs in the 29.1-29.25 GHz band. Although these rules, as proposed, appear overly restrictive in power

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9 The Commission recognizes that only the Motorola Iridium MSS system is proposed to operate in this band.

10 It must be noted that these proposed rules do not reflect an agreement of the Negotiated Rulemaking Committee, nor the results of a technical analysis, but rather reflect the result of negotiations between only certain of the parties to the Negotiated Rulemaking. The negotiations were based on assumptions that are no longer valid: 1) that the Commission would award two 1,000 MHz LMDS licenses per service area, and 2) that the prohibition would result in a very little decrease in overall system capability. Particularly given the invalidity of assumptions underlying these proposed rules, it is doubtful that even those few parties involved in this negotiation would now agree to the prohibitions.

limitations,[11] the rules could serve as the basis for rules applicable to subscriber stations in this band as well. As the rules establish a budget for the total amount of interference that can be accepted by MSS satellite receivers, some portion of this budget can be used by subscriber stations instead of hub stations. Indeed, LMDS networks have their own interference budgets, which limit the simultaneous co-channel use of LMDS frequencies by both subscriber and hub stations. Because LMDS hubs and subscribers cannot use the same frequencies at the same time in the same place, that part of the MSS satellite interference budget that is not being used by LMDS hub stations, either because some of the channels are free, or because some of the time slots are free, can be allocated to LMDS subscriber stations.[12]

Therefore, the simplest approach to permitting interactive LMDS subscriber station transmissions while still protecting MSS satellite receivers, would be to apply proposed Sections 21.1020 and 21.1021 to the aggregate of hub and subscriber transmissions. This solution could be achieved by simple language changes in the proposed rules. These rules could then be revisited after the Commission has actual knowledge of LMDS and MSS operations.

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11 Based on comments submitted during the Negotiated Rulemaking, the proposed power levels for LMDS hubs (proposed Sections 21.1020 and 21.1021) do appear to be overly conservative and should be revised. Video/Phone, for example, disagreed with the LMDS power density values in those rules and argued that MSS earth station power levels should be increased instead. The International Communications Engineering Group also criticized the power levels of Section 21.1020 as "impos[ing] an inequitable burden on LMDS operators." See Addenda, Report of the LMDS/FSS 28 GHz Band Negotiated Rulemaking Committee, September 23, 1994. Moreover, sharing calculations done by Working Group 2 employ a protection criteria requirement for Iridium satellites of I/No = -13 dB; however, this is never justified, but merely reported in the Working Group 2 report (at page 36).

12 See also Sector Antennas and Composite Omni-Directional Gain, Document NRMC 92.2, September 20, 1994, which explains the concept of aggregate radiated power for LMDS systems.

B. There is Sound Precedent to Permit Subscriber Station Transmissions in Shared Bands

The Commission was faced with an almost identical situation more than a decade ago in dealing with frequency sharing between terrestrial microwave transmitters and satellite receivers. In that case, however, an analysis was performed that did lead to sharing rules. The terrestrial microwave stations were the subscriber stations of Digital Termination Systems (DTS), which were proposed to operate in a hub/subscriber design that is very similar to a LMDS hub/subscriber configuration. The satellite receivers were NASA's passive radiometer sensors.[13] See Memorandum Opinion and Order in Gen. Docket No. 79-188, 90 FCC 2d 319 (1982).

As that Commission decision recites, NASA and a DTS proponent undertook a difficult analysis that included assumptions about the number and distribution of DTS subscriber stations, power levels, traffic levels, and other factors. They negotiated an agreement that limited the power density and constrained the number of subscriber stations that could be installed over the succeeding five years. In addition, because of the acknowledged uncertainty in forecasting subscriber station growth, as well as uncertainty in radiometer technology, they agreed to ask the Commission to revisit the terms of the agreement in five years. Id. at ¶ 14. The Commission adopted each element of the negotiated agreement, despite the uncertainty in the assumptions used in the analysis. Id. at ¶ 17.

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13 Radiometers are more susceptible to terrestrial interference than the MSS feeder link receivers because the radiometers seek to receive very weak unintentional emissions from earth while the MSS feeder link receivers are trying to receive strong transmissions aimed from high power earth stations.

The similarity and relevance of this 1982 Commission action to the instant proceeding is quite remarkable. In both cases, the issue is interference from terrestrial microwave stations—whose population, direction, and traffic loading is difficult to predict—into satellite receivers whose technology may improve over time. In the 1982 case, the parties made reasonable but perhaps crude assumptions about the unknown parameters and agreed to revisit them when more information was known. In the instant case, however, the Commission is proposing a complete prohibition, rather than the more flexible and ultimately more efficient approach it adopted in its 1982 proceeding.

In conclusion, there are far less restrictive means to protect MSS satellite receivers against interference from LMDS subscriber stations, short of a complete prohibition. In light of these considerations, the Commission should allow two-way use of this spectrum and should adopt less stringent power limits on LMDS stations. The coordination rules could be revised if there were any evidence of actual interference after both satellite and LMDS systems were deployed.

III. As an Alternative, the FCC Should Require Access by Educational Users on Commercial Facilities At Preferential Rates

As an alternative, Public Television requests that the Commission require guaranteed access at free or preferential rates for noncommercial entities to a certain number of channels or a certain percentage of capacity on commercial LMDS systems. Such access would allow public broadcasting licensees the ability to provide educational programming and other functions needed within certain areas, such as interactivity and data transfer. In addition, the Commission could adopt auction rules that award an auction

preference or bidding credit to proposals that set aside more than the minimal capacity for use by noncommercial educational entities at preferential rates.

A. Guaranteed Access and Preferential Rates Are Necessary for Noncommercial Use of LMDS

It has long been recognized that noncommercial entities are not able to pay commercial rates for access to new technologies. Congress, the FCC, and/or local franchising authorities have already mandated educational access to other multichannel TV technologies such as cable TV, wireless cable, and DBS. It seems unlikely that homes subscribing to an LMDS system would also subscribe to one of these other technologies. Therefore, some similar sort of educational access obligation should be placed on LMDS licensees as a condition of the grant of their licenses.[14]

Paying commercial rates for interactive capacity to distribute public broadcasting's educational services does not serve Congress' intent—to foster the widest possible dissemination of educational services at the lowest possible cost. Public broadcasting's scarce resources, obtained through combinations of federal and state funding, underwriting and viewer contributions, are already stretched to maintain the universally-available public broadcast service that is the system's bedrock obligation to the American people. Additional distribution costs for expanded interactive applications are simply not available. Moreover, typical commercial methods

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14 Under the Cable Television Consumer Protection and Competition Act of 1992, DBS operators are required to provide reduced-rate educational access to between four and seven percent of their channel capacity. A similar approach could mandate a certain percentage of capacity or a certain number of channels be made available on each LMDS system for educational use. While this provision has been struck down as unconstitutional by the U.S. District Court for the District of Columbia, (See Daniels Cablevision, Inc. v. United States, 835 F. Supp. 1 (D.D.C. 1993)), the ruling—that there was insufficient basis in the congressional record—is currently being appealed. See Daniels Cablevision, Inc. v. United States, No. 93-5290 (D.C. Cir.).

of funding such a service, such as charging, either by the minute or through a subscription fee, would not further Congress' intent to "ensure that all citizens . . . have access to public telecommunications services through all appropriate available telecommunications distribution technologies . . ." 47 U.S.C. 396(a)(9).

B. The Commission Could Adopt Auction Rules Including Incentives To Provide Noncommercial Access

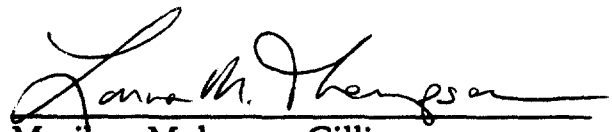
In addition to setting aside a minimum number of LMDS channels on commercial systems for noncommercial use, the Commission could also adopt auction rules that provide incentives to commercial bidders for LMDS licenses to provide additional capacity to noncommercial entities at preferential rates. The auction advantage could take the form of an auction preference or a credit on the commercial entity's auction bid. For example, the amount paid toward the winning bid by the commercial winner could be reduced by the percentage of additional spectrum offered to the noncommercial entity.

Conclusion

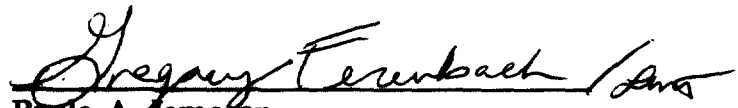
Public Television requests that the Commission set aside the 150 MHz of 29.1-29.25 GHz LMDS spectrum for noncommercial licensing and adopt rules permitting noncommercial LMDS licensees to lease excess capacity in order to advance rapid implementation of noncommercial LMDS systems. Further, the Commission should adopt technical rules less restrictive than those proposed for this 150 MHz of spectrum and, specifically, allow two-way use of the spectrum and less conservative LMDS power limits.

As an alternative, Public Television requests that the Commission require guaranteed access at free or preferential rates for noncommercial entities to a certain number of channels or a certain percentage of capacity on commercial LMDS systems. To provide further incentive to commercial bidders to increase capacity guaranteed for noncommercial use beyond the minimum required amount, the Commission could adopt auction rules, such as auction bidder credits, for proposals that set aside noncommercial capacity beyond the minimum required amount.

Respectfully submitted,

By: 

Marilyn Mohrman-Gillis
General Counsel
Lonna M. Thompson
ASSOCIATION OF AMERICA'S
PUBLIC TELEVISION STATIONS
1350 Connecticut Avenue, N.W.
Suite 200
Washington, D.C. 20036
(202) 887-1700



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